GOVERNMENT OF INDIA
SPACE
LOK SABHA

UNSTARRED QUESTION NO:4794
ANSWERED ON:09.05.2007
FUNCTIONING OF SPACE TELESCOPES
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Will the Minister of SPACE be pleased to state:

(a) whether intensive information about the Space are being collected through space telescopes installed in the country;

(b) if so, the details thereof;

(c) the details of the specific achievements made through the use of data collected by these telescopes, centre-wise;

(d) whether India is a partner in any of the International Telescope Projects; and

(e) if so, the details thereof?

Answer

MINISTER OF THE STATE IN THE MINISTRY OF SPACE (SHRI PRITHVIRAJ CHAVAN)

(a) Yes, Sir. There are a number of ground-based optical, near IR and radio telescopes installed by various institutes and laboratories in the country for studying the sun and stellar objects. As part of space borne observation, three experiments, namely the Gamma Ray Bursts (GRB) on SROSS-C2, Indian X-ray Astronomy Experiment − IXAE on IRS-P3 and Solar X-ray Spectrometer-SOXS on G-SAT-2 have been launched by scientists from ISAC, TIFR and PRL respectively.

(b) The ground-based Optical near-Infrared telescopes are located at Vainu Bappu Observatory, Kavalur and the Indian Astronomical Observatory, Hanle-Ladakh under Indian Institute of Astrophysics (IIA), Girawali Optical Observatory under IUCAA (Inter University Centre for Astronomy and Astrophysics), Mt. Abu Infrared Observatory under Physical Research Laboratory (PRL), Sampurnanand telescopes at Nainital under Aryabhatta Research Institute of Observational Sciences (ARIES). A few Solar Observatories are also operated at Udaipur under PRL, at Kodaikanal under IIA, at Nainital under ARIES. Similarly, large scale Radio Telescopes like Giant Meterwave Radio Telescope (GMRT) near Narayangaon (Pune), Ooty Radio Telescope, under National Centre for Radio Astrophysics (NCRA), TIFR have been operational.

(c) The highlights of specific achievements for the respective centers are given below:-

Rings around Neptune, new northern hemisphere rapidly oscillating Ap (roAp) star, 3 delta-scuti stars and Quasi Periodic Oscillations in the High Mass X-ray Binary Pulsar have been discovered from the ARIES observatory.

Several pulsars, including a binary millisecond pulsar in a globular cluster, most extended gaseous disk of neutral atomic hydrogen in a dwarf galaxy, active galaxies with evidence of recurrent nuclear activity have been discovered using NCRA Ooty Radio Telescope and GMRT.

A few metal-poor stars and number of new T tauri stars have been identified in the star forming regions of blue compact galaxies using IIA telescope facilities.

The role of magnetic energy of active regions in launching CMEs and related phenomena has been investigated using USO.

SOXS has detected Fe-Ni complex lines for estimation of temperature in the solar coronal region.

The IXAE discovered quasi-periodic X-ray bursts with unique rise and fall time from the Black Hole source GRS 1915+105 that supports black hole nature of the X-ray source.

(d) International partnerships exist between individual scientists and centers/ institutes with their international counterparts in some of the above activities.

(e) IUCAA is a member of an international consortium of observatories from nine countries in the Southern African Large Telescope (SALT) project.

PRL participated in the international Global Oscillation Network Group (GONG) project.

The NCRA is participating in the multi-nation `International Square-Kilometer Array` (SKA) radio telescope project that targets to build a next generation radio telescope about 10 times more powerful than any existing radio telescope in the world.

Further, Indian scientists have also used the data and made joint discoveries using NASA/ESA space telescopes like Hubble space telescope, Chandra X-ray telescope, Newton XMM telescope.